

## Association for Information Systems AIS Electronic Library (AISeL)

---

ICIS 1999 Proceedings

International Conference on Information Systems  
(ICIS)

---

December 1999

# Information Systems, Power, and Organizational Relations: A Case Study

Bill Doolin

*University of Waikato*

Follow this and additional works at: <http://aisel.aisnet.org/icis1999>

---

### Recommended Citation

Doolin, Bill, "Information Systems, Power, and Organizational Relations: A Case Study" (1999). *ICIS 1999 Proceedings*. 26.  
<http://aisel.aisnet.org/icis1999/26>

This material is brought to you by the International Conference on Information Systems (ICIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICIS 1999 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# **INFORMATION SYSTEMS, POWER, AND ORGANIZATIONAL RELATIONS: A CASE STUDY**

**Bill Doolin**

University of Waikato Management School  
New Zealand

## **1. INTRODUCTION**

This paper presents a critical analysis of the initial outcome of implementing a “casemix” information system within a newly incorporated New Zealand hospital. A casemix information system links detailed information on patient treatment and clinical activity with associated costs as a basis for contracting and for revealing the relative efficiency of clinical resource usage. The attempted use of these systems as a management control mechanism has become of increasing importance in New Zealand hospitals. The analytical focus of the paper is based on the following underlying research questions: (1) How was the casemix information system implicated in mobilising particular representations or understandings of organizational reality? (2) How were organizational power relations affected by the introduction of this major new information system?

The primary source of data in the study was extended informal interviews conducted in a number of the new clinical units at the hospital during a three-month period in 1996. Forty people were interviewed in 48 interviews, spread over 41 hours. Specific interviews were conducted with clinical unit directors, operations managers, medical consultants and charge nurses. In addition, clinical support staff, corporate managers, information systems personnel and administrative personnel were interviewed. Topics covered included the ongoing development of major information systems for contracting and patient management, and the use of computerized information by clinical unit directors, managers and clinical staff.

Several theoretical themes are used to interpret the case study discussed in this paper. First, the heterogeneous nature of information technology and organization suggests that the construction of an information system is interrelated with that of new organizational structures from which much of the system’s perceived significance is derived (Bloomfield 1991; Bloomfield et al. 1997; Kimble and McLoughlin 1994). Second, the discursive nature of information systems suggests that information systems are implicated in mobilizing particular representations of organizational reality through their incorporation of constitutive concepts of dominant organizational discourses (Bloomfield 1995; Laughlin 1991). Third, certain information systems may promote the exercise of a disciplinary power (Foucault 1977) that encourages self-regulation rather than centralized control (Coombs, Knights and Willmott 1992; Knights and Murray 1994; Orlikowski 1991). Finally, the nature of disciplinary power suggests that information systems are potentially both empowering and constraining (Bloomfield and Coombs 1992; Covaleski, Dirsmith and Michelman 1993; Knights and Morgan 1991).

## **2. INTERRELATED SYSTEMS AND STRUCTURES**

In the hospital studied, the casemix information system was an essential element in restructuring the organization. This restructuring was organized around the construction of clinical units, a new organizational form based on clinical specialities and headed by clinician managers. Information systems were intended to play a major role in coordinating the new clinical units. In particular, information from the casemix system offered a way to “break the organization down” into visible and manageable parts built around identifiable revenue streams related to clinical specialities:

That then gave another lead to the logical way to split the organization up....That's where we sort of evolved a clinical unit. Because we could match the contracting stream. The clinical units were relatively autonomous. While a patient can flow across several, our information systems allow us to capture all that and bring it back to a base contract. (Interview with CEO, May 1996)

The casemix information system was needed to coordinate the movement of patients between the new clinical units and to match the associated resource utilization with the relevant purchaser-provider contracts. The casemix system was intended to facilitate decentralization of responsibility to clinical unit directors and to encourage flexible operations. At the same time, it provided a more centralized monitoring and scrutiny of the activities of the decentralized clinical units (Orlikowski 1991).

The development of clinical units at the hospital studied presupposed a casemix information system that provided a window on organizational practices. However, at the same time, the development of the new organizational structure gave the casemix information much of its perceived significance, both in terms of contract management and the accountability of clinical unit directors for both clinical and financial outcomes. This finding is supported by evidence from studies conducted in the United Kingdom, where although casemix information systems and clinical units often have separate origins, they become progressively interwoven in the stabilization of particular patterns of organizing within hospitals (Bloomfield, Coombs and Owen 1994; Ham and Hunter 1988; Packwood, Keen and Buxton 1991; Symes 1992).

### **3. REPRESENTING ORGANIZATIONAL REALITY**

The second theoretical theme concerned the discursive nature of information systems and their capacity to mobilize particular representations of organizational reality. In the hospital studied, the influx of private sector experts in accounting, management and information technology, and the extensive development of management information systems, promoted new discourses and ways of understanding organizational reality. The new management information, economic language and decision-making criteria permeated (to varying degrees) into the everyday activities of organizational participants in the hospital. The traditional meaning systems of health professionals were challenged and potentially reconstructed by managerial and economic notions of effectiveness, efficiency, performance and quality (Coombs, Knights and Willmott 1992).

The definition of clinical specialities as semi-autonomous business units and the introduction of a standard contribution report for each unit were ways of measuring financial and contractual performance and of focusing management attention on profit- and loss- making areas. This encouraged an understanding of organizational reality grounded in economic notions of value and commodity. The visibility given to concepts incorporated in this information, such as profit or loss, average length of stay or performance against contract volume, introduced new practices of accounting for clinical performance.

The casemix information system played an important role in mobilizing the concepts and norms associated with the new economic and management discourses. The casemix system offered an apparently concrete (although partial) representation of organizational reality, which helped give meaning to the organizational practices within which it was utilized. To the extent that organizational participants drew upon the information, rules and resources embodied in the casemix system in their daily activity, they reproduced and reaffirmed its importance, form and content. The casemix system was implicated in the daily work of many organizational participants, providing a technical vocabulary to mediate the meanings given to events, objects, and relationships such as those between units or with the health service purchaser organization (Orlikowski 1991):

Casemix has become a part of the way we work. Just a day to day thing we're utilizing...I mean, one's using it all the time. Whenever we're doing presentations or developing stuff for business plans, volumes for buying capital items....We use it for contract stuff. I mean it's just there, it's just being used. (Interview with Director Oncology, September 1996)

Resisting or reconstructing the concepts and practices associated with the casemix information meant challenging the whole information system. This was a difficult undertaking given its technical complexity and the organizational resources tied up with it. The casemix system was presented as the solution to the problem of ensuring that the hospital gained the necessary funding for survival. In this way, the existence of the casemix information system was linked to that of the organization, making it correspondingly more difficult to argue against the system (Knights and Murray 1994; Latour 1987).

#### 4. INFORMATION TECHNOLOGY AND (SELF-) CONTROL?

The third theoretical theme concerned Foucault's (1977) discursive and relational conception of power and the notion that users of an information system might be enrolled in and reproduce a particular representation of organizational reality, in effect disciplining themselves. The casemix information system at the hospital studied represented an organizationally directed surveillance practice that attempted to classify and codify complex medical activity and render it visible and capable of being acted upon (Covaleski, Dirsmith and Michelman 1993). Using information generated from the casemix system, managers could make stronger truth claims (Boland and Schultze 1996) in their attempts to contain clinical resource usage. The provision of casemix information was intended to engender a sense of resource efficiency in clinicians as the consequences of their patient treatment decisions are made visible. Management's view was that objective information on resource usage would lead to rational decision making by clinicians and to more efficient and responsible medical practice as less expensive treatment protocols were pursued.

The organizational restructuring at the hospital studied was accompanied by a change in orientation of the casemix information system. The early emphasis on financial information for management control of clinical activity was followed by an emphasis on clinical casemix information that would enable clinicians to review and control their own clinical practice. This information included measures such as length of stay, day surgery versus inpatient surgery, operating theater time management and off-hours laboratory usage, as well as information on costs and revenues. The deployment of this type of information was intended to make the clinical activity of individual clinicians and specialities comparable in such a way as to influence clinical behavior through peer pressure:

There are difficulties overall with actually managing doctors. I believe the only way of managing doctors is to get information through information systems which provides them with the sort of reports in which peer pressure will bring some conformance to expenditure. (Interview with Manager Support Services, March 1996)

However, there was little evidence that the casemix information system at the hospital increased management's ability to control clinicians or clinical activity. The original emphasis on costing information meant that instead of the clinically useful system clinical staff had been promised, the casemix information system was perceived as just another management tool and lost credibility. Information from the casemix system was largely ignored by the clinicians:

I choose to ignore it most of the time....All casemix seems to have been so far, to me, is a way for the Regional Health Authority to describe what they're going to buy, and I guess I'm not prepared to have the case mix dictated in that fashion. If patients need treatment they need treatment...I'm not prepared to have my practice *organized* in that fashion. (Interview with consultant orthopaedic surgeon, September 1996)

The provision of clinical casemix information was at an early stage in the hospital. Only a relatively few attempts had been made by operations managers or unit directors to present clinical casemix reports to groups of clinicians for the purposes of peer review. Nevertheless, casemix information was becoming the prevalent framework within which discussions on resource allocation in the hospital were structured. In other words, it was becoming the "currency of debate, the principal media through which claims to legitimacy and control are processed" (Morgan and Willmott 1993, p. 12). In reproducing the discourse and practices associated with the casemix information system, the potential exists for clinicians to internalize the norms and values inherent in the system, opening up the possibility of their self-control as self-disciplined subjects. Unfortunately, it is still too early to draw any conclusions about the effectiveness of this aspect of the casemix information system.

#### 5. THE POSSIBILITY OF RESISTANCE

The case study provides support for the final theoretical theme outlined earlier, that the "double-edged" nature of disciplinary power implies that information systems are both empowering and constraining (Bloomfield and Coombs 1992). Part of the ambiguity surrounding the implementation of the casemix information system at the hospital studied lay in the ability of clinicians to resist its application. Many of the clinicians at the hospital remained unconvinced about the validity of the monitoring attempted through the casemix information system. The surveillance process facilitated through the casemix system increased

the visibility of the resources used for patient care, leading to a degree of defensiveness and concern on the part of clinicians. Some felt that the information would be used to justify management decisions on financial grounds, ignoring clinical issues:

Unless it's approached the right way, a lot of clinicians will react quite violently against being restrained and data collected....It has to be approached very delicately with the clinicians because our main emphasis is on adequate patient care and quality patient care. (Interview with Director Plastic Surgery, September 1996)

Clinicians at the hospital generally resisted their definition as users and subjects of casemix information. They were able to challenge the casemix information by producing alternative explanations for the variations between individual clinicians, or querying the accuracy of the casemix information and the validity of the procedures used to construct it. The tendency for clinicians to constantly question the validity of casemix information placed enormous pressure on managers at the hospital in presenting the information to clinicians. One operations manager commented that the clinicians in her unit actually claimed to be "confused" by casemix information in order to divert her attempts to present the information:

They have no interest in either the financial side of casemix or anything else. They're here to work. They're here to operate. They're here to look after the patients. They find the data suspect. I've tried to talk to them... but "don't confuse them with data of any kind." They just get "confused" if you start to feed anything. (Interview with Operations Manager Orthopaedics, September 1996)

Some clinicians had begun to divert the casemix information toward their own purposes. Several senior clinicians were exploring the possibilities presented by the casemix information system in their new roles as clinician managers. Others could recognize the usefulness of the information system, for instance in arguing for more resources:

I won't say it's not useful, because [the unit director is] able to show that we're grossly underfunded. That's a very useful thing to be able to show....[W]e are showing that there are more of certain things being done each year and that we need more money to cope with that. That's useful. I'll accept that. (Interview with consultant general surgeon, September 1996)

## **6. CONCLUSION**

The two questions underlying this research concerned the extent to which the casemix information system was implicated in mobilizing a particular understanding of organizational reality in the hospital, and the influence the casemix information system had on organizational relations within the hospital. With regard to the first of these questions, the casemix information system can be viewed as part of an attempt to constitute clinicians as subjects of a management discourse. For example, clinicians were defined as capable of reviewing and managing their own clinical practice using casemix information. By accepting the role and legitimacy of the casemix system and reproducing the practices based around it, the potential was there for clinicians to regulate their own behavior so as to accommodate the new understanding of organizational reality and the criteria for decision making provided through these discursive practices.

However, it was difficult to discern much evidence that this self-disciplining phenomenon was occurring in the case study presented here. The long history in the organization of the casemix system as a management and accounting tool, and the relatively early stage of the clinical casemix phase of this information system project, may have contributed to this finding. A longer term study over many years would be required to determine the existence of such subtle potential power effects on clinician behavior. Nevertheless, the interdependency of the casemix information system and the organizational units within which it was used and which it helped structure did help to promulgate the new management and economic discourse and to produce more defined accountabilities for clinicians.

With regard to the second question mentioned above, the case study confirms that the notion of clinicians as the passive subjects of a computerized surveillance system is too simplistic. Organizational participants are actors who could do otherwise, and the possibility of resistance is integral to the conception of power used in this paper. Clinicians could and did resist the application of comparative casemix information, and some used the system themselves to argue for more resources. In this sense, information systems associated with attempts to increase management control of organizational participants are also capable of empowering those intended to be controlled by making available a legitimate arena for action and discussion with the organization.

## 7. REFERENCES

- Bloomfield, B. P. "The Role of Information Systems in the UK National Health Service: Action at a Distance and the Fetish of Calculation," *Social Studies of Science* (21:4), 1991, pp. 701-734.
- Bloomfield, B. P. "Power, Machines and Social Relations: Delegating to Information Technology in the National Health Service," *Organization* (2:3/4), 1995, pp. 489-518.
- Bloomfield, B. P., and Coombs, R. "Information Technology, Control and Power: The Centralization and Decentralization Debate Revisited," *Journal of Management Studies* (29:4), 1992, pp. 459-484.
- Bloomfield, B. P.; Coombs, R.; and Owen, J. "The Social Construction of Information Systems: The Implications for Management Control," in *The Management of Information and Communication Technologies: Emerging Patterns of Control*, R. Mansell (ed.), London: Aslib, 1994, pp. 143-157.
- Bloomfield, B. P.; Coombs, R.; Owen, J.; and Taylor, P. "Doctors as Managers: Constructing Systems and Users in the National Health Service," in *Information Technology and Organizations: Strategies, Networks and Integration*, B. P. Bloomfield, R. Coombs, D. Knights, and D. Littler (eds.), Oxford: Oxford University Press, 1997, pp. 112-134.
- Boland, R. J., Jr., and Schultze, U. "From Work to Activity: Technology and the Narrative of Progress," in *Information Technology and Changes in Organizational Work*, W. J. Orlikowski, G. Walsham, M. R. Jones, and J. I. DeGross (eds.), London: Chapman and Hall, 1996, pp. 308-324.
- Coombs, R.; Knights, D.; and Willmott, H. C. "Culture, Control and Competition: Towards a Conceptual Framework for the Study of Information Technology in Organizations," *Organization Studies* (13:3), 1992, pp. 51-72.
- Covaleski, M. A.; Dirsmith, M. W.; and Michelman, J. E. "An Institutional Theory Perspective on the DRG Framework, Case-mix Accounting Systems and Health-care Organizations," *Accounting, Organizations and Society* (18:1), 1993, pp. 65-80.
- Foucault, M. *Discipline and Punish: The Birth of the Prison*, London: Penguin, 1977.
- Ham, C., and Hunter, D. J. *Managing Clinical Activity in the NHS*, London: King's Fund Institute, 1988.
- Kimble, C., and McLoughlin, K. "Changes to the Organisation and the Work of Managers Following the Introduction of an Integrated Information System," in *The Management of Information and Communication Technologies: Emerging Patterns of Control*, R. Mansell (ed.), London: Aslib., 1994, pp. 158-177.
- Knights, D., and Morgan, G. "Corporate Strategy, Organizations and Subjectivity: A Critique," *Organization Studies* (12:2), 1991, pp. 251-273.
- Knights, D., and Murray, F. *Managers Divided: Organisation Politics and Information Technology Management*, Chichester, England: Wiley, 1994.
- Latour, B. *Science in Action: How to Follow Scientists and Engineers Through Society*, Cambridge, MA: Harvard University Press, 1987.
- Laughlin, R. "Can the Information Systems for the NHS Internal Market Work?" *Public Money and Management* (11:3), 1991, pp. 37-41.
- Morgan, G., and Willmott, H. "The 'New' Accounting Research: On Making Accounting More Visible," *Accounting, Auditing and Accountability Journal* (6:4), 1993, pp. 3-36.
- Orlikowski, W. J. "Integrated Information Environment or Matrix of Control? The Contradictory Implications of Information Technology," *Accounting, Management and Information Technologies* (1:1), 1991, pp. 9-42.
- Packwood, T.; Keen, J.; and Buxton, M. *Hospitals in Transition: The Resource Management Experiment*, Milton Keynes, England: Open University Press, 1991.
- Symes, D. "Resource Management in the National Health Service," in *Handbook of Public Services Management*, C. Pollitt and S. Harrison (eds.), Oxford: Blackwell, 1992, pp. 194-204.